

REMARKS/ARGUMENTS

Claims 44-46, 104-105, 110, 113, 116, 117, 122, 124-126, 131, 134-136 and 143-144 are active.

Claim 44 is amended to more particularly define the LCST units in the polymer as described on pages 16-16 of the specification. This subject matter is also believed to be within the scope of the elected subject matter. The cosmetic or dermatological adjuvant is described, e.g., on page 32 of the application.

No new matter is believed to have been added.

The rejection under 35 USC 112, first paragraph relating to the phrase "no cloud point" is no longer applicable, in part, as that phrase has been deleted from the claims. With respect to the rejection relating to the water solubility, the application makes it clear that water solubility of the entire polymer is dictated by the solubility of the water soluble unit. Thus, the description of water-soluble units (see page 10) accompanied with the discussion on pages 2 and 13 makes it quite clear that it is the polymer as a whole which has the defined solubility imparted by the water-soluble units. This clearly shows possession of what is claimed.

Withdrawal of the rejection is requested.

To the provisional rejection relating to copending application 10/069,981, it is requested that this rejection be held in abeyance since the alleged conflicting claims have not yet been patented. Further, Applicants note the following from MPEP § 822.01:

The "provisional" double patenting rejection should continue to be made by the examiner in each application as long as there are conflicting claims in more than one application unless that "provisional" double patenting rejection is the only rejection

remaining in one of the applications. If the "provisional" double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the "provisional" double patenting rejection in the other application(s) into a double patenting rejection at the time the one application issues as a patent.

To the remaining rejections applied under 35 USC 102(b) or 35 USC 103(a).

By way of background, as discussed in the specification on page 4, lines 16-25, the invention is based on the discovery that certain polymers meeting this definition have the advantageous property of lowering the surface tension or the interface tension of water and as such particular useful for manufacturing foaming compositions and emulsions. This discovery significantly advances the state of the art, because it enables one to make such foaming compositions and emulsions with smaller amounts of typical emulsifiers and foaming agents (such as surfactants, which have a relatively aggressive negative affect on the skin (see pages 6-7 of the present specification). Compositions made using these polymers remain stable over a wide temperature range which is a property that is particularly useful in consumer cosmetic products which have to be maintained in various temperatures (e.g., manufacturing, shipping, and storage in a retail store.

In the Examples section of the application, various polymers were prepared that are representative of the claimed invention. In particular as outlined in Table 1 on page 37 of the specification, for example, polymers having polyacrylic acid backbones were used to graft on units with LCST (EO)₆(PO)₃₉ (polymer 1) and poly-N-isopropyl-acrylamide (polymer 2).

As described in Example 1 beginning on page 43 through page 45, including Table 3, the surface tensions effects of polymers 1 and 2 upon addition to water were assessed. The measurements were performed at two temperatures, 15°C and 38°C; and compared to the polyacrylic backbone by itself, the (EO)₆(PO)₃₉ graft by itself, or the poly-N-isopropyl-acrylamide graft by itself. The results are depicted in Table 3 and summarized on page 45,

last paragraph: The results of Table 3 show that a significant reduction in the surface tension of water is obtained with polymers 1 and 2, this reduction being even greater above the demixing temperature.

Merchant's goal is to provide "novel demulsifier formulations and processes for dewatering and/or desalting conventional whole heavy petroleum crudes, heavy petroleum crude fractions, residue, fuel oils and refinery hydrocarbon fractions." (col. 3, lines 14-21) This is cannot be seen as anticipatory for a lowering the surface tension of a cosmetic also including a cosmetic or dermatological adjuvant as claimed. At least on this basis, it is requested that the rejection based on Merchant be withdrawn.

The polymers disclosed in Merchant do not contain an oligomer or copolymer of water-soluble units as claimed (see the maleic anhydride grafted to an alkyl phenol formaldehyde resin in col. 6, lines 41-49), and the polymers disclosed in Merchant do not contain LCST units, which are one of the limitations that defines the claims over this reference—see the preferred p-nonyl phenyl formaldehyde resin having 10 moles of ethylene oxide in the Examples of Merchant (see col. 10, lines 42-45 and col. 11, lines 29-30).

This formaldehyde resin with 10 moles of ethylene oxide contained in the polymers are not LCST units as has been clearly shown in the Malcom and Rowlinson publication, now of record. What becomes clear from this publication is that the Merchant polymers described are those that have no LCST. In this Malcolm publication, Figure 6 (Page 926) shows the phase diagrams for polyethylene oxide (indicated in squares and crosses) in which above the curve there exists two phases, below the curve there exists one phase, and the lowest point of the curve defines the LCST. Therefore, this Figure shows that as the molecular weight of the polyethylene oxide gets smaller, the two phase domain also gets smaller. Also illustrated is that for a POE of 3000, the two phase domain is indicated as the oval in the Figure. Taken

together then, 10 units of polyethylene oxide as is the case in Merchant would only exhibit 1 phase, i.e., no LCST.

Merchant discloses oxyalkylated alkyl-phenol formaldehyde resins, having particularly, the formula on column 6, lines 11 to 20. If the oxyalkylene groups are the groups with an LCST, the polymer disclosed in Merchant does not include any water-soluble group in the sense of the present application because the phenolic part of said resins is not water-soluble. Further, the amines and polyols cited in the rejection cannot be considered units constituting a copolymer but functional groups. Oxyalkylated amines and oxyalkylated polyols are not copolymers.

Reconsideration and withdrawal of the rejection is requested.

Koerner and Yamamoto describe polysiloxanes with both alkyl group - containing siloxane units and PEO/PPO groups-containing siloxane units. If the oxyalkylene groups-containing units are the units with an LCST, the polysiloxanes of Koerner and Yamamoto do not contain any water soluble units because the alkyl group-containing siloxane units are not water- soluble. Further, Koerner's and Yamamoto's description of polymers does not meet the claimed limitation of water-solubility in a range of 5 to 80°C at a concentration of at least 10 g/l.

Thus, the polymers of Koerner and Yamamoto are clearly different from the polymers as provided in the claims. Reconsideration and withdrawal of the rejections is requested.

Fogel discloses alkoxylate esters having the formula of column 2, line 45. Those compounds comprise oxyalkylene units but do not comprise several water-soluble unit

because the (single) hydrocarbon chain forming part of said alkoxylate ester is not water-soluble.

Moreover, even if the OCOR₃ moiety forming another part of the compounds of Fogel was considered as water-soluble, there would be only one single water-soluble unit in the compounds of Fogel and not several water-soluble units as in the copolymer used in the present application, e.g., see Claim 44 “wherein the polymer comprises an oligomer or copolymer of water-soluble units.”

As has been explained previously, Fogel’s alkoylate ester the cloud point of the alkoylate esters is preferably below 0°C and cannot be considered a polymer being water-soluble in the range of 5 to 80°C as claimed. Further, unlike the present claims which include a polymer, the alkoxylate esters of Fogel are small molecules with low molecular weights are simply are not polymers (see also the compounds in col. 8, lines 40-45, col. 9, lines 33-42, col. 10, lines 14-24, col. 11, lines 1-7, col. 11, lines 51-60, col. 12, lines 40-49, col. 13, lines 23-30 and col. 14, lines 9-19 of Fogel).

Reconsideration and withdrawal of the rejection is requested.

Yabuta describes a process for preparing crosslinked resin particles involving in the second step an aqueous solution of a water soluble polymer (see [0097]). The water-soluble polymer may be a polyvinyl alcohol containing hydrophobic groups, methyl cellulose or hydroxypropyl cellulose, a polyethylene glycol alkyl ether, a block copolymer of ethylene glycol and propylene glycol.

The polymers recited in that paragraph do not contain both water soluble units and units with an LCST, let alone a specific unit with an LCST recited now in the claims.

Moreover, Yabuta is related to thermosetting powder coating compositions and belongs therefore to a technical field totally different from the technical field of cosmetics as has been specified in the claims.

Withdrawal of the rejection is requested.

The Maroy publications disclose polymers having LCST units exhibiting demixing temperatures which are not the same as those of the LCST units of the claimed polymers. Maroy does not describe a polymer containing LCST units having a demixing temperature of 5 to 40°C at 1% by mass in water in the claimed method. In fact, the LCST units described in the Maroy publications do NOT have, in water, a demixing temperature of from 5 to 40°C at 1% by mass in water. Specifically, on page 2, lines 53-56 and page 3, lines 2-3 of EP '814 and col. 2, line 54 to col. 3, line 4, Maroy describes that the LCST units selected from polyethyleneglycol (POE), polyoxypropylene (POP) or polyoxide of ethylene and propylene (POEP). Furthermore, Examples 1.1, 1.2, 1.3, and 1.4 of EP '814 (Maroy) on pages 3-4, all describe polymers with POE5 as the LCST units, which is polyethyleneglycol with a molecular weight of 5000 g/mol. However, these polymers have a demixing temperature above 100°C at a concentration of 1 % by mass (see page 5, line 41, page 6, lines 37-39, and page 6, lines 57-59 of EP '814). Therefore, these polymers cannot be the same as the polymer defined in the claims (wherein the LCST units have a demixing temperature of 5 to 40°C at 1% by mass in water).

In Example 2.3 (page 7) of EP '814 (Maroy), the polymer contains POP of a molecular weight of 600 as the LCST unit. However, unlike the polymer in the claims, this polymer of Maroy has a demixing temperature of 48°C at a concentration of 1 % by mass. In Example 2.5 (pages 7-8) of EP '814 (Maroy), the polymer contains a POEP polymer with a

molecular weight of approximately 1100. However, unlike the polymer in the claims, this polymer has a demixing temperature above 60°C (see Figure 3 of EP ‘814).

In the Examples of EP ‘649, Maroy describes the same example as 1.2 from EP ‘814 (see the reference to French application 9210224, which is the priority application of EP ‘814 in col. 6, line 40 and lines 54-56) and Examples 4 and 5 which include POE with a molecular weight of about 5000. For the same reasons as discussed above concerning EP ‘814, these specifically described polymers have a demixing temperature above 60°C and are therefore NOT the same as the polymer set forth in the claims.

Having provided evidence that the polymers described by the Maroy publications do not necessarily, each and every time, have the properties of the polymer defined in the claims, the rejections based on Maroy ‘814 and ‘649 should be withdrawn.

There is simply nothing in Maroy which would lead one to select the polymers in the claims nor that in so selecting one would be able to maintain viscosity and stability of a dispersion over a wide temperature range. This is even more apparent when considering the entirety of the Maroy teachings (as is required). While the ‘649 Maroy publication makes passing mention to cosmetics, it is abundantly clear that both of the publications are directed to designing polymers particular useful in the oil industry (see EP ‘814 at page 2, lines 8-11 and EP ‘649, page 2, col. 1, lines 21-29). This is cannot be seen as anticipatory for a method of lowering the surface tension of a cosmetic also including a cosmetic or dermatological adjuvant with the dispersion as claimed.

Withdrawal of the rejections in view of the Maroy publications is requested.

A Notice of Allowance is requested.

Respectfully submitted,

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